Public health psychiatry: an idea whose time has come

Six years ago, K. Walhbeck[1] proposed in this journal that "the evidence base for public mental health interventions is convincing and the time is now ripe to move from knowledge to action". Unfortunately, the field of public mental health has moved too slowly. Indeed, the scholarly review by Fusar-Poli et al[2] concludes that "prevention of mental disorders in young people has not yet solidified as global research or programmatic focus".

Prevention has a long history in medicine, with early successes such as the use of lemons by J. Lind in 1747 to prevent scurvy in the British Navy, and J. Snow's removal of the handle of the Broad Street water pump in 1854 to prevent the spread of cholera in London. There have also been notable advances in prevention of neuropsychiatric disorders. One hundred and fifty years ago, patients with neurosyphilis, such as F. Nietzsche, occupied thousands of beds in mental hospitals. More recently, the toxic effects of phenylketonuria were neutralized by phenylalanine-free diet, and the threatened epidemic of AIDS-related dementia was averted by the development of effective medicines for HIV.

Public health approaches are common in medicine. Mass X-ray screening for tuberculosis was highly effective, and indeed one of us (RMM) was diagnosed, while a Glasgow medical student, as having early tuberculosis by such a screening campaign. Cardiologists, faced with an epidemic of fatal myocardial infarction in the mid 20th century, realized that treatment with evermore expensive interventions was not reducing prevalence; influenced by epidemiologists such as G. Rose, they turned their attention to prevention. Tackling the risk factors for coronary artery disease (such as poor diet, high blood pressure, high cholesterol and smoking) has led to dramatic reductions in the prevalence of myocardial infarction. Similarly, oncologists have long embraced screening and prevention of lung cancer by reducing tobacco smoking in the general population, and now hepatologists are realizing that they cannot continue to treat end-stage liver disease without tackling the root cause – alcohol.

Why has psychiatry lagged so far behind other specialties in embracing a preventive approach? It has not always been like this. During the period of psychoanalytic supremacy, from the 1940s to the 1970s, psychiatrists commonly gave advice on how to improve mental health, for instance by more liberal child rearing practices. Indeed, A. Gregg told the American Psychiatric Association in 1944: "there will be applications [of psychiatry]... to the human relations of normal people – in politics, national and international, between races, between capital and labor, in government, in family life, in education, in every form of human relationship, whether between individuals or groups"[3].

With the decline of psychoanalysis, however, psychiatry retrenched to the clinic and the idea of prevention disappeared from view. The Decade of the Brain from 1990 to 1999 had a primary focus on "brain research", with ever more sophisticated neuroscience, imaging and genetic techniques. But improved knowledge of how the brain "works" did not lead to a reduction in prevalence of mental illness.

As outlined by Fusar-Poli et al, the re-emergence of interest in prevention in psychiatry came with indicated prevention, in the form of early intervention units for first episode psychosis. These have been shown to improve patient health and to be cost-effective. Subsequently, selective prevention in the form of "at risk mental state" services was proposed by McGorry and Yung in Australia, and enthusiastically adopted by academic centres in the US and Europe. The "at risk mental state" paradigm has brought a fresh way of thinking about prevention of mental illness, and, as Fusar-Poli et al note, has now expanded to subsume a transdiagnostic approach and a focus on youth mental health in general. Sadly, this approach has not resulted in the hoped-for reduction in incidence of psychotic disorders, as the service model reaches only a minority of those individuals who will ultimately develop psychosis[4].

Psychiatry needs to move "upstream" and identify possible candidates for selected prevention in childhood, such as subclinical psychotic experiences, developmental delays, psychological and behavioural problems, or family history of mental illness. Focusing on children with a combination of these risk factors, or possibly combining them with biological measures, has potential for intervention. But how to intervene? It has been suggested[5] that "fostering self-esteem, improving parent-child relationships, promoting secure attachment relationships with trusted others, increasing social and neighbourhood supports, and reducing bullying all play a part in improving outcomes". The evidence is there, but psychiatry cannot act alone to implement such broad-ranging measures, and needs "buy-in" from policy makers.

In medicine, universal primary prevention has been shown to be more cost-effective than developing "high-tech" treatments for those with established disease. Persuading the general public not to smoke tobacco has saved many more lives than operating on those with lung cancer or thrombotic coronary arteries. Do we have equivalent opportunities to prevent mental disorder by diminishing population exposure to risk increasing factors? Fusar-Poli et al raise the possibility of reducing mental illness by developing more equitable societies, and point to the high rates of mental disorder in inner cities. High population density, greater exposure to stress, pollution and crime, and lack of green space have all been suggested as responsible for the psychotoxic effect of urbanicity. Although urban planning is beyond the expertise of mental health professionals, we can convince policy makers, by presenting the evidence, that there is an urgent need to re-engineer our cities to improve public mental health.

When examining individual-level risk factors, the best-replicated risk factors in the field of psychosis are obstetric events, child abuse, migration, adverse life events, and heavy cannabis use[6]. Improved perinatal care, supporting positive parenting, and reducing poverty and income inequality can pay dividends for future generations[7]. But there is an urgent need to address one risk factor which is increasing rapidly in both

strength and prevalence – cannabis use.

The worldwide trend towards increasing use of cannabis, especially of high potency varieties, cries out for a preventive approach[8]. A trans-European study estimated that, in London and Amsterdam, 30% and 50% of new cases of psychosis, respectively, would be prevented if no one smoked high-potency cannabis. The risk of developing psychotic disorder was increased 5-fold in those with daily use of high-potency cannabis compared with those who did not use cannabis[8]. This is a similar effect size as between asbestos and lung cancer, but the outcome is much earlier in life. We cannot just wait in our units and emergency departments to treat the increasing numbers of young people with cannabis-related psychosis. There is much to learn from the public education programme implemented in Iceland over the last 20 years, with remarkable decreases in rates of alcohol consumption and tobacco and cannabis smoking among young people[9].

It is time for mental health professionals to speak up about the risks of heavy use of cannabis on rates of psychosis and other mental health problems. It is time to move out of the clinic, remove the handle from the pump, and embrace the challenge of public health psychiatry.

Robin M. Murray[1], Mary Cannon[2]
[1]Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, UK; [2]Royal College of Surgeons of Ireland, Education & Research Centre, Beaumont Hospital, Beaumont, Ireland

1. Wahlbeck K. World Psychiatry 2015:14:36-42.
2. Fusar-Poli P, Correll CU, Arango C et al. World Psychiatry 2021;20:200-21.
3. Murray RM. Lancet 1979;1:255-8.
4. Ajnakina O, David AS, Murray RM. Psychol Med 2019;49:529-34.
5. Healy C, Cannon M. Am J Psychiatry 2020;177: 285-7.
6. Stilo SA, Murray RM. Curr Psychiatry Rep 2019; 21:100.
7. Cannon M, Healy C, Clarke MC et al. Lancet Psychiatry 2020;7:372-3.
8. Murray RM, Hall W. JAMA Psychiatry 2020;77: 777-8.
9. Kristjansson AL, Mann MJ, Sigfusson J et al. Health Promot Pract 2020;21:62-9.

DOI:10.1002/wps.20868

Full speed ahead on indicated prevention of psychosis

Fusar-Poli and eminent colleagues[1] conclude their encyclopedic review of prevention in psychiatry by calling for governments to tackle inequalities in young people's mental health and to invest in improving its social determinants: education, employment, social care, housing, criminal justice, poverty alleviation, social security/welfare benefits, community development, and immigration. We stand firmly with Fusar-Poli et al on this position and would add social justice and public safety to the list. Academics as individuals and their institutions and professional organizations should assist governments to pursue youth mental health as a top priority.

We further commend Fusar-Poli et al for their scholarly review of prevention concepts and in particular their noting that both the public health framework and the World Health Organization framework provide the possibility that some disorders carry risk for other disorders and that conceptual boundaries between preventive and treatment interventions can be porous. We often hear in academic discussions that an intervention must be either preventive or a treatment and that an entity must be defined and named either by risk or by severity, as in clinical high risk (CHR)[2] vs. attenuated psychosis, or prodromal Alzheimer's disease vs. mild cognitive impairment. Our view has long been that the same intervention can provide both treatment and prevention, and that CHR is both a disorder and an indicator of risk for future more severe disorders. In this context, the term "risk syndrome"[3] may be preferable.

We may part ways, however, with Fusar-Poli and colleagues on the relative roles of universal and indicated prevention. Notwithstanding the promise of interventions such as phosphatidylcholine and folic acid tested against surrogate biomarkers, the authors' extensive review sadly identifies few if any universal or selective interventions that meet effectiveness, cost-effectiveness, and implementation standards for reducing the incidence of any mental disorder. The authors' contention that universal public health approaches hold the greatest potential for reducing the risk profile of the whole population does not seem predicated on empirical evidence but rather on theoretical potential.

Along those lines, we take issue with the authors' conceptual Figure 1, partly the basis for their advocacy for universal prevention. This figure shows universal prevention shifting the curve between spectrum of risk and numbers of people to the left, such that there would appear to be no people remaining in the highest risk group who would require indicated prevention. Rather than a shift of a normal curve's x-intercepts to the left, under a universal approach we would expect to see a skewing of the curve such that the risk x-intercepts remain fixed, the left side becomes steeper and higher, indicating a larger number of persons at lower risk, and the right side flattens, indicating a smaller but not zero number of persons at higher risk.

In our alternate conceptualization, there would be a continued need for indicated prevention even under conditions of successful universal prevention. This situation appears to be what occurred in the authors' appropriate example of reducing tobacco use in the population, where new incident cases of non-small cell lung cancer have been reduced by anti-tobacco measures but have not been eliminated[4].

Fusar-Poli et al do advocate for combining universal and indicated prevention, and we staunchly support that advocacy. The non-small cell lung cancer example[4], where mortality has diminished faster than incidence due to the availability of effective new treatments, demonstrates the value at least of tertiary prevention and a potential role for indicated prevention even in the context of effective universal prevention.

With regard to the CHR syndrome as a